Datasheet:

EN Cu-DHP / CW024A
99,90% Pure Copper
Hot rolled

Alumeco ApS
13-01-2025

Internal alloy name:	**CW024A**
Metal:	**Copper**
Chemical Symbol:	**Cu-DHP**
EN:	**EN Cu-DHP**
UNS:	**C12200**
SIS:	**5015**
GB:	**TP2 / C12200**
JIS:	**C1220**
Also known as:	**-**
Alloy type:	**Electrical conducting**

Main usage:

- Automotive – Radiators
- Building – Roofing & Gutters
- Consumers – Household equipment
- Electrical conductors
- Piping – Gas, Water, Heating & Air Conditioning
- Industrial – Barrels & Containers

Main properties:

- Excellent for welding and soldering properties
- Great for deforming, either hot or cold

Important norms and literature:

General Standards
EN 1652: Copper and copper alloys – Plate, sheet, strip and circles for general purposes

Geometric Tolerance
EN 1652: Copper and copper alloys - Plate, sheet, strip and circles for general purposes

Chemical composition in %: EN 1652

Cu	P	Other elements	
		Each	Together
99,90	0,015 – 0,040	-	-

Mechanical properties: EN 1652

Material Condition	Thickness range mm	Rm MPa Min. – Max.	$Rp_{0,2}$ MPa	A_{50mm} for thickness up to 2,5 mm %	A for thickness up to 2,5 mm %	Hardness HBW	Hardness HV
R220 (soft)	0,20 - 5	220 - 260	Max. 140	33	42	-	-
R240 (1/2 hard)	0,20 - 15	240 - 300	Min. 180	8	15	-	-
R290 (3/4)	0,20 - 15	290 - 360	Min. 250	4	6	-	-

*** Information values only;**

Physical properties:

Density (20 °C) g/cm³	Solidification range °C	Electrical conductivity %IACS	Thermal conductivity (20 °C) W/m K	Thermal expansion (20 - 300 °C) µm m^{-1} K^{-1}	Annealing temperature ºC	E – modulus (20 °C) N / mm^2
8,9	1030	85	340	17	-	-

Properties and information's (3 Excellent; 2 Good; 1 Poor/not recommendable)[1]

Machinability (Zerspanbarkeitsindex): 20*
*(CuZn39Pb3 = 100)

Forming Methods:

Hot Formability:	2
Cold Formability:	3

Corrosion resistance:

Atmosphere:	2
Waters and alkaline:	2
Acids, Ammonia, Seawater:	1

Joining Methods:

Soldering:	3
Brazing:	3
Oxy-acetylene welding:	2
Gas-shielded arc welding:	3
TIG welding:	3
MIG welding:	3
Spot/seam welding	1-2
Butt welding	2
Gluing/adhesion:	2

Surface Treatment:

Polishing:	
Mechanical:	2
Electrolytic/chemical:	3
Galvanizing:	3
Hot Dipping:	2

[1]**Information extracted from Kupferverband;**

Tolerances for Hot rolled Products of CW024A

Dimensions: EN 1652:1997*

Tolerances on thickness of hot rolled products (plate, sheet, strip and circles)

Nominal thickness *t* (mm)	Tolerance on thickness for nominal widths *w* (mm)						
	w ≤ 700		700 < *w* ≤ 1000		1000 < *w* ≤ 1500		1500 < *w*
	1)	*2)*	*1)*	*2)*	*1)*	*2)*	
t ≤ 2,5	By agreement						By agreement
2,5 < *t* ≤ 5,0	± 0,25	± 0,30	± 0,30	± 0,35	± 0,35	± 0,45	
5,0 < *t* ≤ 7,5	± 0,35	± 0,45	± 0,40	± 0,50	± 0,45	± 0,55	
7,5 < *t* ≤ 10	± 0,45	± 0,60	± 0,50	± 0,65	± 0,55	± 0,75	
10 < *t* ≤ 15	± 0,75	± 0,95	± 0,80	± 1,00	± 0,90	± 1,10	
15 < *t* ≤ 25	± 0,95	± 1,20	± 1,05	± 1,30	± 1,30	± 1,60	
25 < *t* ≤ 50	± 1,30	± 1,60	± 1,40	± 1,75	± 1,50	± 1,90	
50 < *t*	± 1,50	± 1,90	± 1,65	± 2,05	± 1,80	± 2,20	

1) For all materials except for CuAl8Fe3 (CW303G), CuNi10FeMN (CW352H), CuNi30MnIFe (CW354H) and CuZn20Al2As (CW702R).

2) For alloys CuAl8Fe3 (CW303G), CuNi10FeMN (CW352H), CuNi30MnIFe (CW354H) and CuZn20Al2As (CW702R).

* Values are referred from Table 4 of EN 1652:1997

Dimensions: EN 1652:1997*

Tolerances on width of plate and sheet

Nominal thickness *t* (mm)	Tolerance on thickness for nominal widths *w* (mm)		
	w ≤ 350	350 < *w* ≤ 1250	1250 < *w*
t ≤ 2,0	+2,0 0	+6,0 0	By agreement
2,0 < *t* ≤ 5,0	+4,0 0	+8,0 0	
5,0 < *t*	+8,0 0	+10,0 0	

* Values are referred from Table 7 of EN 1652:1997

Dimensions: EN 1652:1997*

Tolerances on length of plate, sheet and strip cut for lengths up to 5000 mm

Length	Nominal thickness (mm)	Tolerance on length (mm)
As Manufactured (ML)	t ≤ 15	± 50
Fixed length (FL)	t ≤ 5,0	+10 0
	5,0 < t	+15 0

* Values are referred from Table 8 of EN 1652:1997

Dimensions: EN 13599:2014*

Squareness of cut plate and sheet

Nominal width *w* (mm)	Maximum allowable differences between diagonals, for lengths *l* (mm)		
	1000 < *l* ≤ 2000	2000 < *l* ≤ 3000	3000 < *l*
350 < *w* ≤ 700	6	7	8
700 < *w* ≤ 1250	8	9	10
1250 < *w*	By agreement		

* Values are referred from Table 9 of EN 1652:1997

Dimensions: EN 1652:1997*

Tolerances on diameter for circles

Nominal diamter *d* (mm)	Maximum allowable differences between diagonals, for lengths *l* (mm)		
	1000 < *l* ≤ 2000	2000 < *l* ≤ 3000	3000 < *l*
d ≤ 500	± 1	± 1,5	± 2
500 < *d* ≤ 1000	± 2	± 2,5	± 3
1000 < *d* ≤ 2000	± 3	± 3,5	± 4
700 < *d*	-	-	By agreement

* Values are referred from Table 10 of EN 1652:1997

Dimensions: EN 1652:1997*
Edgewise curvature c

Nominal width *w* (mm)	**Maximum edgewise curvature *c* for thicknesses *t* (mm)**	
	$t \leq 1{,}0$	$1{,}0 < t \leq 4{,}0$
$3 < w \leq 8$	12	-
$8 < w \leq 15$	8	10
$15 < w$	4	6

* Values are referred from Table 11 of EN 1652:1997